



UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON NUCLEAR WASTE
WASHINGTON, D.C. 20555

February 9, 1993

The Honorable Ivan Selin
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Chairman Selin:

SUBJECT: PROGRAM PLAN FOR THE ADVISORY COMMITTEE ON NUCLEAR WASTE

Since December 1989, the Advisory Committee on Nuclear Waste (ACNW) has provided at four-month intervals a program plan of anticipated Committee activities. We view the letters forwarding these plans as a convenient avenue for sharing information on where we intend to focus our efforts. This letter covers our proposed plan for February through May 1993. We look forward to your comments.

In preparing this program plan, we have considered the list of technical issues of particular interest to the Commission, requests of individual Commissioners, the agenda items proposed by the Executive Director for Operations (EDO) for the Advisory Committee on Reactor Safeguards and ACNW, the NRC Five-Year Plan, and items of particular interest and/or concern to the Committee members. The priority for each proposed issue is based on information provided by representatives of the Office of Nuclear Materials Safety and Safeguards (NMSS), Office of Nuclear Reactor Regulation (NRR), Office of Nuclear Regulatory Research (RES), and the EDO office, as well as our own interpretation of the subject in relation to our activities as a Committee and our input into the regulatory process.

The schedule for the program plan, as outlined, is based on the current best estimates of work output by the Department of Energy (DOE), Environmental Protection Agency (EPA), and NRC staff and their consultants and contractors (including the Center for Nuclear Waste Regulatory Analyses [CNWRA]). As a result, it is anticipated that certain aspects of the plan will need to be revised.

Full-Committee meetings for this period are tentatively scheduled as follows:

51st meeting	-	February 24-26, 1993
52nd meeting	-	March 24-25, 1993
53rd meeting	-	April 28-29, 1993
54th meeting	-	May 19-20, 1993

In addition, we will hold working group meetings as necessary to facilitate full-Committee review and action on specialized topics.

Specific Topics to be covered during these meetings are described below.

February 24-26, 1993 - 51st Meeting

- The Committee will meet with the Commission to discuss items of mutual interest. These include the Committee's report on a systems analysis of the high-level radioactive waste (HLW) disposal program and its review of the charge given by Congress to EPA and the National Academy of Sciences regarding the development of standards for the proposed Yucca Mountain HLW repository. (High Priority)
- The Committee will review with the NRC staff possible impacts of the Energy Policy Act of 1992 on ongoing agency initiatives in the HLW arena. (High Priority)
- The Committee will discuss with technical and legal professionals the acceptance, in an adjudicatory review, of scientific evidence based primarily on expert judgment. (High Priority)
- The Committee will meet with university personnel to discuss ongoing research on the development of computer programs for assessing airborne releases from earth-mounded concrete bunkers and other types of low-level radioactive waste (LLW) disposal facilities. Of particular interest will be the evaluation of any possible impacts of such studies on associated NRC regulations, regulatory guides, and technical positions. (Medium Priority)
- The Committee will be briefed by a representative of the New Mexico Environmental Evaluation Group on the assessment of flammability and explosion potential of transuranic waste. (Medium Priority)

March 24-25, 1993 - 52nd Meeting

- The Committee will meet with representatives from the Electric Power Research Institute (EPRI) to discuss studies EPRI has conducted on the volumes of LLW that may require interim storage, the applicable regulatory requirements, and the associated guidelines for waste generators. (High Priority)
- The Committee will explore with invited State representatives and others the creation of a nationwide system for summarizing current trends and indicators of performance in LLW management and disposal. Included will be the possible development of a

system to report significant events (mishaps) that occur during such operations. (High Priority)

- The Committee will be briefed on proposed LLW disposal sites rejected by LLW host States. Representatives from host States, NMSS, and the Office of State Programs will participate. (High Priority)
- The Committee will meet with the NRC staff to hear an updated report on the status of the Licensing Support System program. (Medium Priority)
- The Committee will be briefed by the NRC staff on the relationship of the review of the State of Alaska radiation control program by the Conference of Radiation Control Program Directors to similar reviews by the NRC staff. (Medium Priority)

April 28-29, 1993 - 53rd Meeting

- The Committee will be briefed by DOE personnel on newly developing strategies and initiatives for confirming a site for an HLW repository. (High Priority)
- The Committee will be briefed by the NRC staff on its review of the Maine LLW Authority's Waste Disposal Facility Conceptual Design Report. (High Priority)
- The Committee will be briefed on the status of the decommissioning plans for the Ft. St. Vrain Nuclear Power Plant. (High Priority)
- The Committee will review and comment on the Standard Review Plan for the Review of Remedial Action of Inactive Mill Tailing Sites Under Title I of the Uranium Mill Tailings Radiation Control Act (UMTRCA), Revision 1. (Medium Priority)
- The Committee will be briefed on the working group's review of three additional regulatory guides being developed for implementing the revised 10 CFR Part 20, "Standards for Protection Against Radiation." (Medium Priority)

May 19-20, 1993 - 54th Meeting

- The Committee will review and comment on the revised draft NRC High-Level Radioactive Waste Research Program Plan (NUREG-1406) and the associated implementation strategy. The discussion will include a briefing on the complementary technical assistance program. (High Priority)

- The Committee will hear a status report by the NRC staff on the Enhanced Participatory Rulemaking on Radiological Criteria for Decommissioning. (High Priority)
- The Committee will be briefed on the status of the decommissioning plans for the Shoreham Nuclear Power Plant. (High Priority)
- The Committee will review the NRC staff's approach in using the Dose Integrated Over Ten Thousand Years (DITTY) Code for verifying cleanup at sites considered under the Enhanced Participatory Rulemaking. Basic assumptions, scope of use, and extent of use will be addressed. (Medium Priority)
- The Committee will be briefed on the Decision Support System, an interagency cooperative effort (RES is involved for NRC) being developed by Sandia National Laboratories to generate an environmental risk evaluation and database management system. (Medium Priority)
- The Committee will receive an information briefing on the Waste Characterization Study. (Medium Priority)

Other Topics - These will be considered as documents and time become available, taking into consideration their relevant priorities.

- The Committee will be briefed by the NRC staff on its plans for developing guidance (branch technical positions and regulatory guides) for the HLW and LLW programs. (High Priority)
- The Committee will be briefed on the potential impacts that different waste forms (spent fuel, vitrified wastes from different sources, etc.) could have on repository performance. (High Priority)
- The Committee will review and comment on the development of a staff branch technical position on guidance for performance assessments of LLW disposal facilities. (High Priority)
- The Committee will be briefed on the NRC Five-Year Plan, specifically in areas such as the goals of NRC HLW and LLW programs and associated research. (High Priority)
- The Committee will be briefed on the current status of the systematic regulatory analysis being conducted by the CNWRA. (High Priority)
- The Committee will be briefed by the NRC staff on its review of a DOE topical report entitled "Erosion Rates at the Yucca

Mountain Geologic Setting: Methodology and Results." (Medium Priority)

- The Committee will be briefed on the compatibility between NRC and Agreement State regulations for LLW disposal facilities. (Medium Priority)
- The Committee will attend a tutorial conducted by the NRC staff (NMSS and RES) on the step-by-step technique that involves the use of personal computers to calculate complementary cumulative distribution functions. (Medium Priority)
- The Committee will be briefed by scientists from Johns Hopkins University on their studies on the use of geochemical natural analogs for estimating the performance of an HLW repository. (Medium Priority)

The Committee will continue to broaden and update its technical understanding of HLW disposal by the following technical exchanges away from headquarters:

- June 23-24, 1993 - Tour and interactions with personnel at Canada's Whiteshell Nuclear and Underground Research Laboratories.
- October 27-28, 1993 - Tour and interactions with DOE program office personnel in Las Vegas, Nevada, and at the Yucca Mountain site.

ACNW WORKING GROUP MEETINGS

- Regulatory Guides for Implementing Revisions to 10 CFR Part 20, March 26, 1993, Bethesda, MD - An ACNW working group and the ACRS Subcommittee for Occupational and Environmental Protection Systems will jointly review the following proposed regulatory guides for implementing revised 10 CFR Part 20: (1) DG-8006, "Control of Access to High and Very High Radiation Areas in Nuclear Power Plants," (2) DG-8009, "Interpretation of Bioassay Measurements," and (3) DG-8013, "ALARA Radiation Protection Program for Effluents From Materials Facilities."
- Low-Level Radioactive Waste Performance Indicators, March 23, 1993, Bethesda, MD - The working group will explore with invited State representatives and others the creation of a nationwide system for summarizing current trends and indicators of performance in LLW management and disposal. Included will be the possible development of a system to report significant events (mishaps) that occur during such operations.

- Engineered Barrier Systems (date to be determined), Bethesda, MD - The working group will review the role of, and the degree of reliance that should be placed on, engineered versus natural barriers within an HLW geologic repository system.
- Potential Impact of Groundwater Use on the Performance of a Proposed High-Level Waste Repository (date to be determined), Bethesda, MD - The working group will consider the likelihood of groundwater use and the resulting impacts of this use on the performance of the proposed Yucca Mountain HLW repository. Included will be an evaluation of the potential for the development of geothermal energy sources within the vicinity of the proposed site. This meeting will supplement the October 20, 1992 ACNW working group meeting on the potential for natural resources at the Yucca Mountain site.
- Characterization of the Unsaturated Zone Flow and Transport Properties (date to be determined), Bethesda, MD - The working group will examine the relationships between precipitation, recharge, and flux through the unsaturated zone at the proposed Yucca Mountain site, and the adequacy of ongoing field studies to ascertain these relationships. Emphasis will be placed on the modeling of flow in the unsaturated zone, alternative conceptual models of fracture versus matrix flow, and conditions under which fracture flow can be shown to predominate. The working group will also focus on the recharge term in hydrogeologic models, alternative conceptual models for how and where regional recharge occurs, and the effect of assumptions about recharge on model results.
- Use of Fractals for Fluid Flow at Yucca Mountain (date to be determined), Bethesda, MD - The working group will examine the use of fractals in the development of conceptual and numerical models of fluid flow in unsaturated, fractured rock. Studies show that the roughness characteristics of fracture surfaces can be simulated by the use of fractals. DOE is considering the use of this approach in its study plan on fluid flow in unsaturated fractured rock systems.

This list represents our best estimate of the topics to be considered through May 1993. If you or your fellow Commissioners have additional items to suggest or proposed changes in priorities, please let us know.

Sincerely,



Dade W. Moeller
Chairman

The Honorable Ivan Selin

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February 9, 1993

cc: Commissioner Rogers
Commissioner Curtiss
Commissioner Remick
Commissioner de Planque
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